

B. DESIGN LOADS

1. IN ADDITION TO THE BUILDING DEAD LOADS, THE VARIOUS PORTIONS OF THE STRUCTURE ARE DESIGNED FOR THE FOLLOWING LIVE LOADS:
 - PARKING AND DRIVE AREAS = 50 PSF
 - STAIRS, LANDINGS & LOBBIES = 100 PSF
 - OFFICE SPACES = 50 PSF
 - MECHANICAL/ELEVATOR = 150 PSF
 - CONCENTRATED WHEEL LOAD = 2,000 LBS
 - VEHICLE IMPACT BUMPER LOAD,
18" ABOVE FLOOR = 10,000 LBS

2. SNOW LOAD AT ROOF FOR ZONE 2: 30 PSF TYPICAL + DRIFT/SLIDING.

3. WIND LOAD FOR ZONE 3, EXPOSURE B, GRADE TO 50': 21 PSF
 50' TO 100': 21 PSF
 100' TO 150': 26 PSF

4. SEISMIC PER M.S.B.C.
 - PEAK ACCELERATION, $A_v = A_a = 0.12g$
 - SOIL COEFFICIENT, $S = 1$
 - RESPONSE FACTOR, $R = 5 \frac{1}{2}$
 - DEFLECTION FACTOR, $C_d = 5.0$
 - SEISMIC HAZARD EXPOSURE GROUP, C
 - PERFORMANCE CATEGORY, 1
 - BUILDING FRAME SYSTEM WITH SPECIAL REINFORCED CONCRETE MOMENT FRAMES AND CONCRETE BRACED FRAMES
 - ANALYSIS PROCEDURE EQUIVALENT LATERAL STATIC EARTHQUAKE FORCE.

1. CONCRETE SHALL BE NORMAL WEIGHT AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS TYPICAL FOR TOPPING ON PRECAST MEMBERS IN DRIVE AREAS, CONCRETE SHALL 5,000 PSI TYPICAL UNLESS NOTED OTHERWISE.
2. CONCRETE TOPPING SHALL CONTAIN CORROSION INHIBITOR AND SEALER. REFER TO SPECIFICATIONS.
3. COMPLETE SHOP DRAWINGS AND SCHEDULES OF ALL REINFORCING STEEL SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF THAT PORTION OF THE WORK. ALL ACCESSORIES MUST BE SHOWN ON THE SHOP DRAWINGS.
4. ALL SHORING SHALL REMAIN IN PLACE UNTIL CONCRETE HAS ATTAINED 75% OF ITS 28-DAY COMPRESSIVE STRENGTH (SEE SPECIFICATIONS).
5. ALL CONSTRUCTION AND CONTROL JOINT LOCATIONS MUST BE SHOWN ON SHOP DRAWINGS AND APPROVED BY THE ENGINEER. CONSTRUCTION JOINTS NOT SHOWN ON THE DRAWINGS SHALL BE LOCATED SO AS TO LEAST IMPAIR THE STRENGTH OF THE STRUCTURE AND SHOULD GENERALLY BE LOCATED AT POINTS OF MINIMUM SHEAR.
6. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4" UNLESS NOTED OTHERWISE.
7. WHEN CONCRETE IS PLACED AGAINST PREVIOUSLY HARDENED CONCRETE, THE INTERFACE SHALL BE CLEAN, FREE OF LAITANCE, AND INTENTIONALLY ROUGHENED TO A FULL AMPLITUDE OF APPROXIMATELY 1/4 INCH.
8. ALL KEYS SHALL BE 2"x4" WITH BEVELED SIDES, UNLESS NOTED OTHERWISE.

1. REINFORCING BARS SHALL CONFORM TO ASTM A615 OR A706 GRADE 60.
2. ALL REINFORCING SHALL BE DETAILED IN ACCORDANCE WITH ACI 315 MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES.
3. WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185 AND SHALL BE SUPPLIED IN FLAT SHEETS ONLY. SPLICES OF WWF SHALL BE AT LEAST 12 INCHES.
4. UNLESS NOTED OTHERWISE ALL SLABS REINFORCED WITH WELDED WIRE FABRIC SHALL HAVE AS A MINIMUM ADDITIONAL REINFORCEMENT:
#4 @ 12" O.C. IN CANTILEVERED AREAS.
5. THE FOLLOWING MINIMUM CLEAR CONCRETE COVER SHALL BE PROVIDED UNLESS NOTED OTHERWISE ON THE DRAWINGS:

6. UNLESS OTHERWISE NOTED, PROVIDE AT ALL FOUR SIDES OF OPENINGS, AT TOP AND BOTTOM IN SLABS 2-#6 BARS AND AT EACH FACE IN WALLS 1-#6 BAR EXTENDING 2'-0" BEYOND OPENING, OR HOOKED IF NECESSARY. PROVIDE U SHAPED BARS TO MATCH WALL REINFORCING.
7. ALL REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS UNLESS SHOWN OTHERWISE.
8. UNLESS NOTED OTHERWISE, BARS SHALL BE CONTINUOUS AND SHALL BE RUN CONTINUOUSLY AROUND CORNERS AND LAPPED AT NECESSARY SPLICES OR HOOKED AT DISCONTINUOUS ENDS. SPLICES SHALL GENERALLY OCCUR AT MID-SPAN FOR TOP AND MIDDLE BARS AND AT SUPPORT FOR BOTTOM BARS AND SHALL BE STAGGERED WHEREVER POSSIBLE.
9. ALL MECHANICAL SLEEVE CONNECTIONS SHALL CONFORM TO ACI 318 REQUIREMENTS AND DEVELOP IN TENSION AND COMPRESSION AT LEAST 125% OF THE YIELD STRENGTH OF THE BAR.
10. ALL SPLICES FOR REINFORCEMENT SHALL BE CLASS B UNLESS OTHERWISE SHOWN. ALL SPLICES, DEVELOPMENT LENGTHS AND HOOKS, SHALL CONFORM TO ACI 318.
11. FOR LOCATION OF VENTS, PIPES, OPENINGS, INSERTS, HANGERS, EQUIPMENT PADS, SUPPORTS AND FLOOR DRAINS, CONSULT ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS.
12. BARS SHALL NOT BE CUT OR OMITTED FOR SLEEVE OR DUCT OPENINGS IN FLOORS. BARS MAY BE MOVED Laterally WITHOUT CHANGING THE DISTANCE FROM THE FACE OF CONCRETE. BEND NO BARS IN FIELD WITHOUT APPROVAL OF THE ENGINEER.
13. ALL SLABS PLACED ON GROUND (SLAB-ON-GRADE) SHALL BE REINFORCED WITH MINIMUM 6"x6"-W2.9xW2.9 WELDED WIRE FABRIC, LAPPED 12" ON SIDES AND ENDS UNLESS OTHERWISE SHOWN ON DRAWINGS. ALL WWF SHALL BE EPOXY COATED.
14. DRILL & GROUT ANCHORS SHALL HAVE ADEQUATE EMBEDMENT TO DEVELOP THE ULTIMATE STRENGTH OF THE BAR.

1. UNLESS OTHERWISE SHOWN, ALL PRECAST/PRESTRESSED CONCRETE MEMBERS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI AT 28 DAYS. MINIMUM COMPRESSIVE STRENGTH OF CONCRETE AT TRANSFER OF PRESTRESS SHALL BE 3,500 PSI (TYPICAL UNLESS NOTED OTHERWISE). REFER TO DRAWINGS FOR COMPRESSIVE STRENGTH OF INVERTED TEES, DOUBLE TEE BEAMS AND OTHER MEMBERS.
2. ALL CONCRETE FOR HORIZONTAL CONCRETE MEMBERS (SLABS, BEAMS AND DOUBLE TEES) SHALL CONTAIN CORROSION INHIBITOR AND SEALER. REFER TO SPECIFICATIONS.
3. COMPLETE SHOP DRAWINGS AND SCHEDULES OF ALL REINFORCING STEEL BOTH PRESTRESSED AND NON-PRESTRESSED SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO COMMENCEMENT OF THAT PORTION OF THE WORK. ACCESSORIES MUST BE SHOWN ON THE SHOP DRAWINGS.
4. PRECAST PRESTRESSED CONCRETE MEMBERS SHALL BE LIFTED BY THE DEVICES PROVIDED AND SHOWN ON THE SHOP DRAWINGS. THE BEAMS SHALL BE MAINTAINED IN AN UPRIGHT POSITION.
5. ALL INSERTS, PLATES, STOPS, ANCHORS, ANGLES, REQUIRED FOR CONNECTION OR BEARING SHALL BE PROVIDED WITH THE PRECAST ELEMENTS OR AS CALLED FOR ON THE DRAWINGS. ANY DEVIATION FROM THE DETAILS SHOWN ON THE DRAWINGS SHALL BE SUBMITTED FOR APPROVAL TO THE ENGINEER PRIOR TO FABRICATION AND ERECTION.
6. THE CONTRACTOR SHALL COORDINATE ALL PENETRATIONS OF PRECAST MEMBERS, PRIOR TO FABRICATION. NO FIELD CUTTING OF STRESSING TENDONS WILL BE ALLOWED WITHOUT APPROVAL OF THE ENGINEER.
7. ALL GROUT SHALL BE NON-SHRINK HIGH STRENGTH TYPE. COMPRESSIVE STRENGTH AT 28 DAYS TO BE AS INDICATED IN SPECIFICATIONS UNLESS OTHERWISE NOTED ON DRAWINGS.
8. SPLICE SLEEVE CONNECTIONS FOR PRECAST MEMBERS SHALL CONFORM TO ACI 318 REQUIREMENTS AND DEVELOP IN TENSION AND COMPRESSION AT LEAST 125 PERCENT OF THE YIELD STRENGTH OF THE BAR.

5. PREFABRICATED TEES AND/OR CORNER SECTIONS SHALL BE USED AT ALL WALL INTERSECTIONS.
6. WHERE STEEL OR CONCRETE BEAMS, STEEL JOISTS, OR LINTELS ARE SUPPORTED ON CONCRETE MASONRY, THE MASONRY SHALL BE FILLED SOLID WITH GROUT FOR THREE COURSES UNDER BEAM, JOIST OR LINTEL FOR FOUR FEET LENGTH.
7. REINFORCEMENT FOR 8" CONCRETE MASONRY BOND BEAMS SHALL BE 2-#4 BARS CONTINUOUS, UNLESS NOTED OTHERWISE. BOND BEAMS SHALL BE LOCATED AT 4'-0" O.C. MAXIMUM AND AT TOP OF WALL AND AT ALL FLOOR INTERSECTIONS.
8. ALL REINFORCING SHALL BE GROUTED SOLID CONTINUOUSLY, IN CELLS OR BOND BEAMS. FILLING SUCH CORES AND BOND BEAMS WITH MORTAR IS STRICTLY PROHIBITED.
9. ALL MASONRY BEARING WALLS SHALL BE BRACED UNTIL THEY ARE ANCHORED BY THE STRUCTURE.

DESIGN, FABRICATION, AND ERECTION SHALL BE IN ACCORDANCE WITH AISC SPECIFICATION FOR BUILDINGS.

2. ALL STRUCTURAL STEEL SHALL BE NEW STEEL CONFORMING TO ASTM STANDARD SPECIFICATIONS. STRUCTURAL STEEL AS AMENDED TO DATE, UNLESS NOTED OTHERWISE ON THE DRAWINGS.

3. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING:

A. ROLLED SHAPES AND PLATES	A572 OR A588 GR. 50	FY = 50 KSI
B. TUBE SECTIONS	A500 GR. B	FY = 46 KSI
C. PIPE	A53 TYPE S	FY = 35 KSI
D. ANCHOR BOLTS	A36 OR A307	FY = 36 KSI
E. HIGH STRENGTH BOLTS AND ANCHOR BOLTS	A325	FY = 92 KSI
F. HEADED STUDS	A108 GR. 50	FY = 50 KSI

4. SHAPES NOTED "GALV." ON DRAWINGS SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A-123. ALL STEEL EXPOSED SHALL BE SO GALVANIZED. REFER TO ARCHITECTURAL AND RELATED DRAWINGS AND SPECIFICATIONS FOR PAINTING REQUIREMENTS.

5. WELDS SHALL BE MADE ONLY BY OPERATORS CERTIFIED BY THE STANDARD QUALIFICATION PROCEDURE OF THE AMERICAN WELDING SOCIETY.

6. WELDING: IN ACCORDANCE WITH LATEST EDITION OF AWS D1.1 CODE FOR WELDING IN BUILDING CONSTRUCTION.

7. CONNECTIONS NOT DETAILED SHALL BE DESIGNED FOR LOADS SHOWN ON DRAWINGS OR FOR LOADS GIVEN IN STANDARD AISC LOAD TABLES FOR LENGTH, SECTIONS, AND STRENGTH SPECIFIED.
SHOP CONNECTIONS: WELDED OR HIGH STRENGTH BOLTED.
FIELD CONNECTIONS: HIGH STRENGTH BOLTED USING 3/4" DIAMETER,

8. UNLESS OTHERWISE NOTED ALL COLUMNS SHALL HAVE 1/4" LEVELING PLATES SET ON 3/4" NON-SHRINK GROUT AND 4-3/4" DIAMETER ANCHOR BOLTS EMBEDDED 12"

9. BRACING MEMBERS SHALL BE DETAILED TO AVOID ECCENTRIC CONNECTIONS, UNLESS OTHERWISE INDICATED ON DRAWINGS.

10. ALL COLUMN ENDS SHALL BE MILLED TO BEAR.

11. FOR ALL OPENINGS IN INTERIOR AND EXTERIOR WALLS, WHERE OTHER TYPE OF LINTELS ARE NOT CALLED FOR, PROVIDE ONE ANGLE FOR EACH 4" NOMINAL WALL THICKNESS AS FOLLOWS. LINTELS CONSISTING OF MORE THAN ONE ANGLE SHALL BE BOLTED OR PLUG WELDED TOGETHER AT 12" O.C. WHEN LINTELS ABOUT COLUMN PROVIDE CONNECTION AS REQUIRED.

SPANS UP TO 5'-0"	L 4 X 3 1/2 X 5/16	WITH 6" END BEARINGS
SPANS 5'-1 TO 7'-0"	L 5 X 3 1/2 X 5/16	WITH 8" END BEARINGS
SPANS 7'-1 TO 8'-0"	L 6 X 4 X 3/8	WITH 10" END BEARING

2. ALL STEEL (LINTELS, ETC.) SHALL BE HOT-DIP GALVANIZED.

3. CONNECTIONS OF BEAMS TO SUPPORTING MEMBERS SHALL BE STANDARD AISC DOUBLE ANGLE CONNECTIONS.

4. ALL MOMENT CONNECTIONS SHOWN AND OR NOTED ON THE DRAWINGS SHALL BE FULL PENETRATION WELDED MOMENT CONNECTIONS.

5. UNLESS OTHERWISE SHOWN PROVIDE 1/2" THICK STIFFENER PLATES ON EACH SIDE OF BEAM WHEN COLUMN OCCURS ABOVE OR BELOW BEAMS.

6. FOR STRUCTURAL BEAM OVER COLUMN USE 3/4" CAP PLATE +4-3/4" DIAMETER HIGH STRENGTH BOLTS.

1. ANY DISCREPANCIES ON THESE PLANS, WITH REGARD TO FIELD DIMENSIONS OR CONDITIONS, SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE AFFECTED PORTION OF WORK.
2. SHORE, SHEET AND BRACE EXCAVATIONS AS REQUIRED TO ASSURE COMPLETE SAFETY AGAINST COLLAPSE OF EARTH AND DAMAGE TO ADJACENT PROPERTY INCLUDING BUT NOT LIMITED TO EXISTING STREETS, BUILDING AND UTILITY LINES.



Architecture:
Fennick McCredie
Architecture, Ltd.

Survey:
Judith Nitsch Engineering

Cost Estimating:
Hanscomb, Faithful & Gould

Code Compliance:
Robert W. Sullivan, Inc.

Landscape Architecture:
Pressley Associates, Inc

KEY PLAN

STRUCTURAL NOTES

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60% SUBMITTAL
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